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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,364	01/20/2006	Seung-Ji Yang	2017-063	5621

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EXAMINER	
HANNETT, JAMES M	

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2622	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/565,364	YANG ET AL.	
	Examiner	Art Unit	
	JAMES M. HANNETT	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,8,9 and 14* is/are rejected.

7)☒ Claim(s) *3-7 and 10-13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/20/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 1/20/2006 has been considered by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1: Claims 1, 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,919,866 B2 Kanevsky et al in view of USPN 6,985,524 B1 Borchers.

2: As for Claim 1, Kanevsky et al teaches the use of a system that captures images using an inherent image capture device (Column 2, Lines 22-36, Column 5, Lines 12-20 and Column 2, Lines 62-65) that captures images and performs image processing to determine the color of objects in the drivers field of view and informs the driver of the appropriate colors in order to aid a color blind person to distinguish colors. However, Kanevsky et al does not teach the use of adjusting in real time video to compensate for color blindness.

Borchers depicts in figures 2 and 3 and teaches on Column 2, Lines 1-22 and Column 5, Lines 55-60 A color compensation method of receiving video

frame data and automatically compensating for colors of the video frame data for a person with color blindness, comprising the steps of: extracting digital video frame data from a digital image (output of 16); calculating external environment conditions (calculated individual colors) from the extracted video frame data; receiving color blindness characteristics of a color blind driver (Column 5, lines 55-61); receiving preference of the color-blind driver (type of compensation and whether compensation is performed); compensating for colors of the video frame data according to the external environment conditions (RGB colors) and the input information (type of color blindness); and displaying (24) finally compensated colors according to the preference of the color-blind driver. Borchers teaches that performing this color space conversion/compensation enables a color blind person to perceive real time video that has been adjusted for their color blindness and enables them to view the video with a better range of colors.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the real-time video color compensation method for color blindness as taught by Borchers in the color blind automobile navigation system of Kanevsky et al in order to enable a color blind person to perceive real time video that has been adjusted for their color blindness and enables them to view the video with a better range of colors.

Kanevsky et al in view of Borchers teaches on Column 2, Lines 15-22 adjusting real-time video to compensate for color blindness in at least the known major color deficency types of color blindness. However, Borchers does not

specifically teach storing a color correction map for anomalous trichromacy color blindness.

Official Notice is taken that it was well known in the art at the time the invention was made that anomalous trichromacy color blindness was a major known type of color blindness at the time the invention was made.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a color correction map for anomalous trichromacy color blindness as one of the types of color blindness deficiencies stored in memory of the invention of Kanevsky et al in view of Borchers since anomalous trichromacy color blindness was a major known type of color blindness at the time the invention was made

3: In regards to Claim 8, Kanevsky et al teaches the use of a system that captures images using an inherent image capture device (Column 2, Lines 22-36, Column 5, Lines 12-20 and Column 2, Lines 62-65) that captures images and performs image processing to determine the color of objects in the drivers field of view and informs the driver of the appropriate colors in order to aid a color blind person to distinguish colors. However, Kanevsky et al does not teach the use of adjusting in real time video to compensate for color blindness.

Borchers depicts in figures 2 and 3 and teaches on Column 2, Lines 1-22 and Column 5, Lines 55-60 A color compensation method of receiving video frame data and automatically compensating for colors of the video frame data for a person with color blindness, comprising the steps of: extracting digital video

frame data from a digital image (output of 16); calculating external environment conditions (calculated individual colors) from the extracted video frame data; receiving color blindness characteristics of a color blind driver (Column 5, lines 55-61); receiving preference of the color-blind driver (type of compensation and whether compensation is performed); compensating for colors of the video frame data according to the external environment conditions (RGB colors) and the input information (type of color blindness); and displaying (24) finally compensated colors according to the preference of the color-blind driver. Borchers teaches that performing this color space conversion/compensation enables a color blind person to perceive real time video that has been adjusted for their color blindness and enables them to view the video with a better range of colors.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the real-time video color compensation method for color blindness as taught by Borchers in the color blind automobile navigation system of Kanevsky et al in order to enable a color blind person to perceive real time video that has been adjusted for their color blindness and enables them to view the video with a better range of colors.

Kanevsky et al in view of Borchers teaches on Column 2, Lines 15-22 adjusting real-time video to compensate for color blindness in at least the known major color deficency types of color blindness. However, Borchers does not specifically teach storing a color correction map for anomalous trichromacy color blindness.

Official Notice is taken that it was well known in the art at the time the invention was made that anomalous trichromacy color blindness was a major known type of color blindness at the time the invention was made.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a color correction map for anomalous trichromacy color blindness as one of the types of color blindness deficiencies stored in memory of the invention of Kanevsky et al in view of Borchers since anomalous trichromacy color blindness was a major known type of color blindness at the time the invention was made

4: As for Claim 14, Kanevsky et al teaches the use of a system that captures images using an inherent image capture device (Column 2, Lines 22-36, Column 5, Lines 12-20 and Column 2, Lines 62-65) that captures images and performs image processing to determine the color of objects in the drivers field of view and informs the driver of the appropriate colors in order to aid a color blind person to distinguish colors. However, Kanevsky et al does not teach the use of adjusting in real time video to compensate for color blindness.

Borchers depicts in figures 2 and 3 and teaches on Column 2, Lines 1-22 and Column 5, Lines 55-60 A color compensation method of receiving video frame data and automatically compensating for colors of the video frame data for a person with color blindness, comprising the steps of: extracting digital video frame data from a digital image (output of 16); calculating external environment conditions (calculated individual colors) from the extracted video frame data;

receiving color blindness characteristics of a color blind driver (Column 5, lines 55-61); receiving preference of the color-blind driver (type of compensation and whether compensation is performed); compensating for colors of the video frame data according to the external environment conditions (RGB colors) and the input information (type of color blindness); and displaying (24) finally compensated colors according to the preference of the color-blind driver. Borchers teaches that performing this color space conversion/compensation enables a color blind person to perceive real time video that has been adjusted for their color blindness and enables them to view the video with a better range of colors.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the real-time video color compensation method for color blindness as taught by Borchers in the color blind automobile navigation system of Kanevsky et al in order to enable a color blind person to perceive real time video that has been adjusted for their color blindness and enables them to view the video with a better range of colors.

Kanevsky et al in view of Borchers teaches on Column 2, Lines 15-22 adjusting real-time video to compensate for color blindness in at least the known major color deficency types of color blindness. However, Borchers does not specifically teach storing a color correction map for anomalous trichromacy color blindness.

Official Notice is taken that it was well known in the art at the time the invention was made that anomalous trichromacy color blindness was a major known type of color blindness at the time the invention was made.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a color correction map for anomalous trichromacy color blindness as one of the types of color blindness deficiencies stored in memory of the invention of Kanevsky et al in view of Borchers since anomalous trichromacy color blindness was a major known type of color blindness at the time the invention was made

5: Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,919,866 B2 Kanevsky et al in view of USPN 6,985,524 B1 Borchers in further view of USPN 6,591,008 Surve et al.

6: In regards to Claim 2, Kanevsky et al in view of Borchers teaches the use of capturing image data and converting the image data to compensate for different types of color blindness and further displaying the compensated image on a display so that a color blind driver can view a better sense of color. However, Kanevsky et al in view of Borchers teaches performing the color space conversion using the derived primary colors and not based on the colors and brightness of the image.

Surve et al teaches a method of performing color compensation to an image based on a type of color blindness and teaches that the conversion can

take place using luminance (brightness data) data and color difference data. Furthermore, performing color compensation in the luminance and color difference color spaces is well understood and therefore advantageous to perform.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the color contrast adjustment method of Surve et al in the system of Kanevsky et al in view of Borchers in order to performing color compensation in the luminance and color difference color space and therefore, improve image quality.

7: As for Claim 9, Kanevsky et al in view of Borchers teaches the use of capturing image data and converting the image data to compensate for different types of color blindness and further displaying the compensated image on a display so that a color blind driver can view a better sense of color. However, Kanevsky et al in view of Borchers teaches performing the color space conversion using the derived primary colors and not based on the colors and brightness of the image.

Surve et al teaches a method of performing color compensation to an image based on a type of color blindness and teaches that the conversion can take place using luminance (brightness data) data and color difference data. Furthermore, performing color compensation in the luminance and color difference color spaces is well understood and therefore advantageous to perform.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the color contrast adjustment method of Surve et al in the system of Kanevsky et al in view of Borchers in order to performing color compensation in the luminance and color difference color space and therefore, improve image quality.

Allowable Subject Matter

Claims 3-7 and 10-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Hannett whose telephone number is 571-272-7309. The examiner can normally be reached on 8:00 am to 5:00 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen, Vu can be reached on 571-272-7320 The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/James M. Hannett/
Primary Examiner
Art Unit 2622

JMH
January 22, 2009